



OptiPhos® Plus improves turkey performance at 250 FTU/kg

Trial description

1 Set-up

- **Location:** University of Warmia and Mazury, Poland
- **Trial period:** February – May 2018
- **Animals:** 540 Hybrid Converter females distributed over 30 pens of 18 birds each.
- **Feeds** (Table 1; pelleted, corn/soy based):
 - Starter feed (d 0-7) was without added phytases and was fed to all treatments (12 g/kg Ca and 6.0 g/kg aP).
 - Grower 1 feed (day 8-28):
 - o Positive control containing 12 g/kg Ca and 6.0 g/kg aP
 - o Negative control containing 11 g/kg Ca and 4.5 g/kg aP
 - Grower 2 feed (day 29-56):
 - o Positive control containing 10.0 g/kg Ca and 5.0 g/kg aP
 - o Negative control containing 9.0 g/kg Ca and 3.5 g/kg aP
 - Finisher feed (day 56-84):
 - o Positive control containing 8.5 g/kg Ca and 4.3 g/kg aP
 - o Negative control containing 7.5 g/kg Ca and 2.8 g/kg aP

2 Treatments (only grower and finisher)

- Positive control
- Negative control
- Negative control + OptiPhos® Plus at 250 FTU/kg

3 Measurements

- Technical result: growth, feed intake and feed conversion.
- Day 40-44: total tract digestibility was determined by collecting excreta for determination of digestibility of dry matter, ash, Ca and P.
- At day 44: per pen 2 birds with average body weight were selected of which the right tibia were removed and pooled to one sample to determine bone ash.

Results

- OptiPhos® Plus added at 250 FTU/kg to the negative control brought final body weight and feed conversion back to the positive control (Fig. 1).
- OptiPhos® Plus **significantly** increased the dry matter digestibility vs the negative control (Table 2).
- Ca and P digestibility were improved significantly by adding OptiPhos® Plus even exceeding the positive control value.
- Based on the bone ash results and the dig. P value measured, it could be calculated that 250 OptiPhos® Plus equals 0.78 g aP and 0.67 g dig. P (as MCP) respectively.

Table 1. Feed composition and analysis

Feed material	Starter (d 1-7)	Grower 1 (d 8-28)		Grower 2 (d 29-56)		Finisher (d 57-84)	
		PC	NC	PC	NC	PC	NC
Corn	46.4	46.4	47.6	46.0	47.3	50.3	51.6
Soybean meal	39.4	39.4	39.2	38.4	38.2	30.6	30.4
Rapeseed meal	5.0	5.0	5.0	7.0	7.0	10.0	10.0
Potato protein	3.0	3.0	3.0	0.0	0.0	0.0	0.0
Soybean oil	1.2	1.2	0.8	3.8	3.4	3.0	2.6
Animal fat (lard)	0	0	0	0	0	2.5	2.5
Limestone	1.6	1.6	1.6	1.2	1.3	1.0	1.1
MCP	2.2	2.2	1.5	1.7	1.0	1.4	0.7
Others*	1.3	1.3	1.3	1.9	1.9	1.1	1.1
Nutritional composition (g/kg)							
Crude protein	270	270	270	250	250	225	225
Lysine	18.0	18.0	18.0	16.2	16.2	14.0	14.0
Calcium	12.0	12.0	11.0	10.0	9.0	8.5	7.5
Total Phosphorus	9.4	9.4	7.9	8.5	7.0	7.7	6.2
Av. Phosphorus	6.0	6.0	4.5	5.0	3.5	4.3	2.8
ME (kcal/kg)	2750	2750	2750	2900	2900	3030	3030

* Salt, Sodium sulphate, Choline Chloride, Synthetic Amino Acids and vitamin/mineral premix

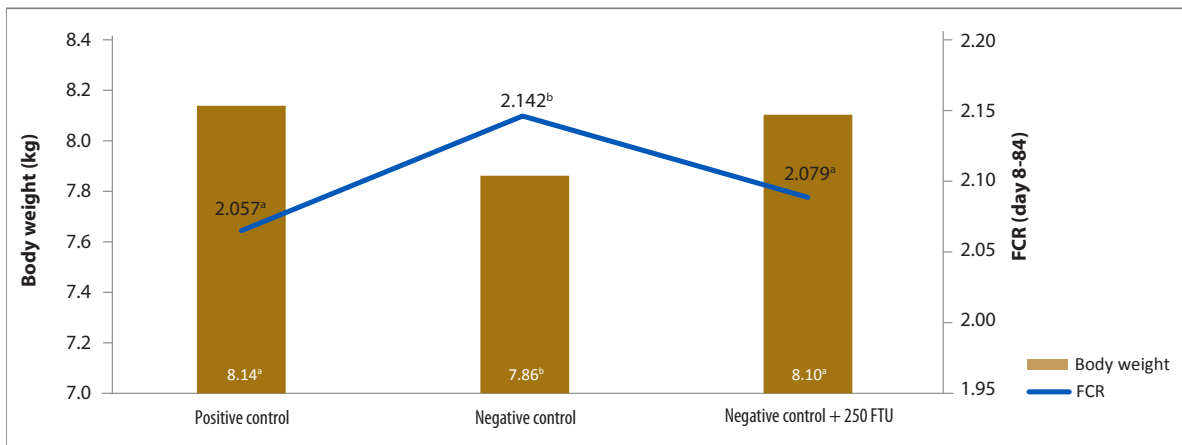


Fig. 1. Effect on body weight and feed conversion (a,b values with a different superscript are significantly different at P<0.05)

Table 2. Bone ash (%) at day 44 and digestibility (%) of dry matter, ash, Ca and P at 40-44 days of age

	Bone ash	Digestibility			
		Dry matter	Ash	Calcium	Phosphorus
Positive control	66.1 ^a	71.1 ^a	47.2 ^a	56.0 ^a	48.6 ^b
Negative control	63.0 ^b	69.3 ^b	33.1 ^c	46.6 ^b	42.9 ^c
Negative control + 250 FTU	64.4 ^{ab}	71.1 ^a	39.9 ^b	58.2 ^a	54.0 ^a

a,b values with a different superscript are significantly different at P<0.05

Conclusion

- Adding OptiPhos® Plus at 250 FTU/kg to a feed reduced by 1.5 g/kg aP and 1.0 g/kg Ca brought performance back to the level of the positive control, and increased bone ash and P digestibility.
- Based on the bone ash results and the dig. P value measured, it could be calculated that 250 FTU/kg OptiPhos® Plus equals 0.78 g aP and 0.67 g dig. P (as MCP) respectively.